

The Patent Office alleges that Kamada teaches a styrene acrylate based toner having the desired circularity and geometric standard deviation. The Patent Office further alleges that Kamada teaches that the narrow particle size distribution improves imaging and flowability of the toner and that it would have been obvious to one of ordinary skill in the art to have measured a lower and upper geometric standard deviation to arrive at a toner similar to the toner recited in claims 1 to 19. Applicants respectfully disagree with these allegations.

Claim 1 clearly recites toner particles having a mean circularity from about 0.94 to about 0.98, a particle size distribution with a lower number ratio geometric standard deviation ("GSD") of approximately 1.28 to approximately 1.31 and an upper volume GSD ("GSD_v ") of approximately 1.24 to approximately 1.27. One of ordinary skill in the art understands that the upper volume GSD may be demarcated as GSD_v. For example, see paragraph 38 of U.S. Publication No. 2005/0136352.

During the October 5, 2005 interview, Examiner Chapman alleged that one of ordinary skill in the art would not understand the meaning of lower number ratio GSD and upper volume GSD_v. Applicants submit that such terminology is known to one of ordinary skill in the art as described below.

One of ordinary skill in the art understands that the GSD_v can be expressed by using D50 and D84 in cumulative distribution, wherein the volume average particle size distribution index is expressed as (volume D84/volume D50). The particle diameters at which a cumulative percentage of 50% of the total toner particles are attained are defined as volume D50, and the particle diameters at which a cumulative percentage of 84% are attained are defined as volume D84. See paragraph 38 of U.S. Publication No. 2005/0136352 for an explanation of GSD_v.

Similar to the GSD_v , lower number ratio GSD is known to one of ordinary skill in the art. In particular, lower number ratio GSD may be expressed by using D16 and D64 in cumulative distribution, wherein the number average particle size distribution index is expressed as (number D50/number D16).

In contrast to the ranges recited in claims 1 to 19, Kamada teaches a toner having a GSD_v of 1.25 or less. See paragraph 56 of Kamada. Furthermore, Kamada teaches that the lower side number GSD is preferably 1.27 or less. See paragraph 56 of Kamada. The GSD_v disclosed in Kamada (≤ 1.25) merely overlaps with the GSD_v recited in claims 1 and 18 (~ 1.25 to ~ 1.27), while Kamada (≤ 1.27) does not teach or suggest the lower number GSD range recited in claims 1 and 18 (1.28-1.31).

Thus, Applicants submit that Kamada does not teach or suggest a toner particle having a lower number ratio GSD of approximately 1.28 to approximately 1.31 and an upper volume GSD_v of approximately 1.24 to approximately 1.27 as recited in claims 1 and 18. In fact, as explained above, Kamada teaches a lower number ratio GSD of 1.27 or less. This is completely different than the lower number ratio GSD being approximately 1.28 to approximately 1.31, as recited in claims 1 and 18.

For the foregoing reasons, Applicants submit that Kamada does not teach or suggest all of the features recited in claims 1 to 19. Reconsideration and withdrawal of the rejection are thus respectfully requested.

B. Ohno and Inaba in view of Ong

Claims 1-19 were rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Patent No. 6,528,224 ("Ohno") and U.S. Patent No. 6,051,350 ("Inaba") in view of U.S. Patent No. 5,585,215 ("Ong"). This rejection is respectfully traversed.

The Patent Office alleges that Ohno and Inaba teach or suggest a styrene acrylate based toner having the desired circularity and a small circularity standard deviation. Ohno and Inaba do not teach or suggest the lower number ratio GSD and upper volume GSD_V as recited in claims 1 and 18. However, the Patent Office alleges that Ong teaches similar toners with a desired the lower number ratio GSD and upper volume GSD_V. As admitted by the Patent Office, Ong does not teach or suggest the same measurement as the lower number ratio GSD and upper volume GSD_V recited in claims 1 and 18. The Patent Office thus alleges that it would have been obvious to one of ordinary skill in the art to understand that improved imaging and flowability are achieved when similar narrow ranges are present in toners as evidenced by the combination of Ohno or Inaba with Ong. Applicants respectfully disagree with these allegations.

Ong merely teaches a narrow particle size distribution from about 1.10 to about 1.35. Ong does not specify the ratio for obtaining the disclosed GSD. In other words, Ong does not teach or suggest the specific lower number ratio GSD or an upper volume GSD_V as required in claims 1 and 18. One of ordinary skill in the art would not have looked to Ong's teaching of a generalized GSD as teaching a lower number ratio GSD or an upper volume GSD_V as neither characterization is taught or suggested anywhere in Ong. As such, Applicants submit that Ong does not teach or suggest the lower number ratio GSD or the upper volume GSD_V as required in claims 1 and 18.

Moreover, Ong does not teach or suggest that the particle diameters at which a cumulative percentage of 50% of the total toner particles is attained are defined as volume D50 and the particle diameters at which a cumulative percentage of 84% is attained are defined as volume D84. Thus, it is clear that Ong does not teach or suggest GSD_V as recited in claims 1 and 18.

Similarly, Ong does not teach or suggest that the particle diameters at which a cumulative percentage of 50% of the total toner particles is attained are defined as number D50 and the particle diameters at which a cumulative percentage of 16% is attained are defined as number D16. Thus, Ong clearly does not teach or suggest the lower number ratio GSD as recited in claim 1 and 18.

As admitted by the Patent Office, Ohno and Inaba do not teach or suggest the lower number ratio GSD range and the upper volume GSD_v range recited in claims 1 and 18. As such, Ohno, Inaba and/or Ong do not teach or suggest all of the features recited in claims 1-19.

For the foregoing reasons, Applicants submit that claims 1-19 are patentable over the combination of Ohno, Inaba and/or Ong. Reconsideration and withdrawal of the rejection are thus respectfully requested.

II. Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1-19 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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